

### Abstract

The present invention propose to use an optical multiplexer associated with an optical clock as a wavelength converter. Each RZ coded tributary will be carried by a single wavelength (channel) passively interleaved with the others without interferometric interaction hence achieving a not necessarily perfect OTDM. This input data stream as optical data signal composed of different wavelengths is then launched on at least one data access of said optical multiplexer used as a wavelength converter. An optical clock at the desired bit-rate is launched on the probe access of said optical multiplexer synchronously to the multi-wavelength data stream. At the output, the initial clock wavelength is converted on data signal using the gain conversion property of the optical multiplexer. In such a way, a data stream of substantially higher bit-rate is obtained while due to a very precise synchronization a lost of data is minimized.